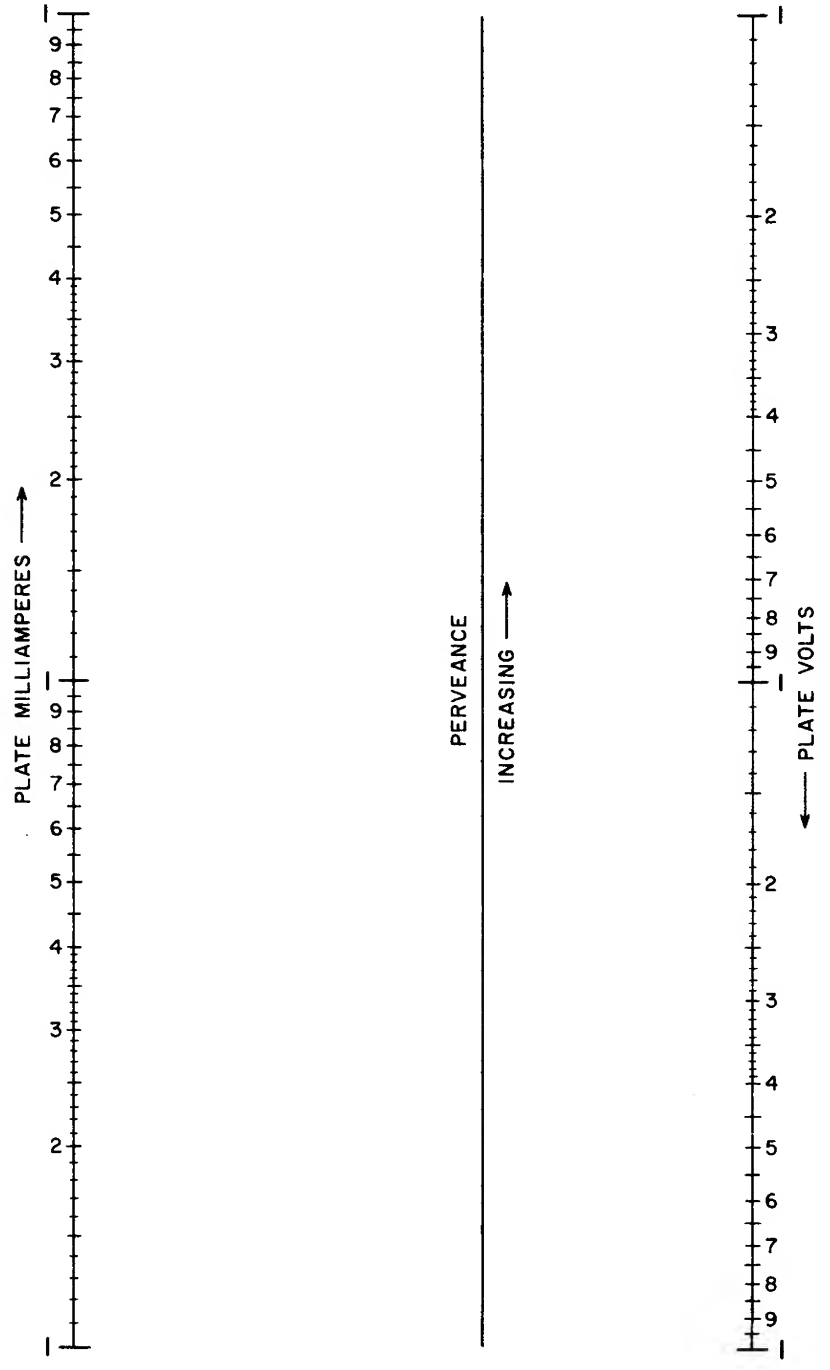
Diode Nomograph

AVERAGE PLATE-CHARACTERISTIC NOMOGRAPH
For Diodes and Rectifiers



92CM-11244

RADIO CORPORATION OF AMERICA
Electron Tube Division
Harrison, N. J.

DIODE
NOMOGRAPH
7-61

Diode Nomograph

The Diode Nomograph on the preceding page may be used to determine for a diode unit (1) tube voltage drop for any plate current, or (2) plate current for any plate voltage when values for a single plate-voltage, plate-current condition are available from the published data. The nomograph may also be used to compare the perveance ($G = I_b/E_{b2}^{\frac{3}{2}}$) of several diodes.

For convenience, PLATE VOLTS and PLATE MILLIAMPERES are plotted on two-decade logarithmic scales with the PERVEANCE line located between them.

To determine for a specific diode unit the desired tube voltage drop or plate current:

1. Obtain the plate-voltage, plate-current condition from the published data for the type.
2. Select convenient values for the decade scales for PLATE VOLTS and PLATE MILLIAMPERES.
3. Locate and connect with a straightedge the points for PLATE VOLTS and PLATE MILLIAMPERES obtained from the data.
4. Mark the intersection of the straightedge and the PERVEANCE line.
5. With this intersection as a pivot point, line up the straightedge with the desired value of PLATE VOLTS or PLATE MILLIAMPERES, and read the corresponding value of tube voltage drop or plate current on the appropriate scale.

Because the pivot point for a specific diode unit represents its perveance, the pivot points for several units (plotted to the same scales) indicate their relative perveance.

EXAMPLE

The published data for type 5U4GB gives a tube voltage drop (Per plate) of 44 volts at plate ma. = 225.

1. To determine the tube voltage drop at plate ma. = 100:
   a. On the nomograph, establish the decade scale for PLATE VOLTS as 1, 10, 100 (reading down) and the scale for PLATE MILLIAMPERES as 10, 100, 1000 (reading up).
   b. Locate and connect the points "PLATE VOLTS = 44" and "PLATE MILLIAMPERES = 225" with a straightedge.
   c. Mark the intersection of the straightedge and the PERVEANCE line.
   d. Pivot the straightedge about this intersection, line it up with the point "PLATE MILLIAMPERES = 100", and read "PLATE VOLTS = 25"—the tube voltage drop (Per plate).
2. To determine the plate current at plate volts = 33:
   a. Use the same pivot point on the PERVEANCE line as in "1d" above, line up the straightedge with the point "PLATE VOLTS = 33", and read "PLATE MILLIAMPERES = 150".

LIMITATIONS

For readings in the order of 1 volt and/or 1 milliampere or less, the nomograph is not accurate because of the effects of contact potential and initial electron velocity.

RADIO CORPORATION OF AMERICA
Electron Tube Division Harrison, N. J.